

**NAVAL FACILITY ENGINEERING COMMAND ATLANTIC
REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62472-99-D-0032
CONTRACT TASK ORDER NO. 0102**

**FINAL ACTION MEMORANDUM
FOR
DERECKTOR SHIPYARD
SANDBLAST GRIT-IMPACTED AREA
NEWPORT NAVAL STATION
MIDDLETOWN, RHODE ISLAND**

Issued:

November 10, 2006

Prepared for:

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Naval Facility Engineering Command
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Pages Affected
All

CONTRACT NO. N62472-99-D-0032	CONTRACT TASK ORDER NO. 0102	ACTIVITY LOCATION Naval Station Newport – Newport, RI
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PROJECT TITLE:

Derecktor Shipyard – Sand Blast Grit Removal

FROM: Tetra Tech EC, Inc.: Program QC Manager George Sze	DATE November 10, 2006
TO: J. Colter (2 CD-Copies and 2 Hardcopies)	DATE November 10, 2006


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ITEM NO.	SUBMITTAL DESCRIPTION	PREPARED/ SUBMITTED BY	APPROVED	DISAPPROVED	REMARKS
1	SD-08, Statements; Final Action Memorandum for Derecktor Shipyard Sandblast Grit-impacted Area	Helene Ropars			

TABLE OF CONTENTS

SECTION	PAGE
1.0 PURPOSE.....	1
2.0 SITE CONDITIONS AND BACKGROUND.....	1
2.1 SITE DESCRIPTION	1
2.2 SITE CHARACTERISTICS	1
2.3 PREVIOUS ACTIONS.....	1
2.4 NPL STATUS	3
3.0 THREATS TO PUBLIC HEALTH OR WELFARE AND THE ENVIRONMENT.....	3
4.0 PROPOSED ACTIONS AND ESTIMATED COSTS	4
4.1 IDENTIFICATION OF REMOVAL ACTION OBJECTIVES	4
4.2 IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES.....	4
4.2.1 Alternative 1 – No Further Action	4
4.2.2 Alternative 2 – Sandblast Grit Excavation.....	4
4.3 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES	4
4.3.1 Effectiveness	5
4.3.1.1 <i>Alternative 1 – No Further Action</i>	5
4.3.1.2 <i>Alternative 2 – Sandblast Grit Excavation</i>	5
4.3.2 Implementability	5
4.3.2.1 <i>Alternative 1 – No Further Action</i>	5
4.3.2.2 <i>Alternative 2 – Sandblast Grit Excavation</i>	6
4.3.3 Cost	6
4.3.3.1 <i>Alternative 1 – No Further Action</i>	6
4.3.3.2 <i>Alternative 2 – Sandblast Grit Excavation</i>	6
5.0 PUBLIC REVIEW.....	6
6.0 EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN	6
7.0 OUTSTANDING POLICY ISSUES.....	6
8.0 ENFORCEMENT	6
9.0 RECOMMENDATION	7
10.0 REFERENCES.....	8

LIST OF FIGURES

FIGURE	PAGE
Figure 1 Derecktor Shipyard Site	2

ABBREVIATIONS AND ACRONYMS

ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EE/CA	Engineering Evaluation and Cost Analysis
FFA	Federal Facilities Agreement
IRP	Installation Restoration Program
MILCON	Military Construction
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station Newport
NEC	Northeast Engineers and Consultants, Inc.
NEHC	Naval Environmental Health Center
NCP	National Contingency Plan
NPL	National Priorities List
PRSC	Post Removal Site Control
RAC	Remedial Action Contract
RIDEM	Rhode Island Department of Environmental Management
RIGL	Rhode Island General Laws
SARA	Superfund Amendments and Reauthorization Act
SHSP	Site-Specific Health and Safety Plan
TBC	To Be Considered
TtEC	Tetra Tech EC, Inc.
U.S.	United States
USEPA	United States Environmental Protection Agency

This document represents the selected remedial action for the sandblast grit-impacted area at the Derecktor Shipyard at Newport Naval Station, Middletown, Rhode Island. It was developed in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended and consistent with the National Contingency Plan (NCP). This decision is based on the administrative record for the site.

Authorized Signature: _____

Captain Todd W. Malloy
Commanding Officer
Naval Station, Newport

Date: _____

1.0 PURPOSE

Tetra Tech EC, Inc. (TtEC) prepared this Action Memorandum on behalf of the United States (U.S.) Navy under the Naval Facilities Engineering Command (NAVFAC) Atlantic, Remedial Action Contract (RAC) N62472-99-D-0032. This Action Memorandum was prepared for the sandblast grit-impacted area at Derecktor Shipyard at the Naval Station (NAVSTA) Newport located in Middletown, Rhode Island.

The purpose of this Action Memorandum is to document the site background; threats to public health, welfare, or the environment posed by the site if no action is taken; summarize the remedial action alternatives identified in the Engineering Evaluation/Cost Analysis (EE/CA); and document the selected remedy.

The EE/CA report for the Derecktor Shipyard sandblast grit-impacted area was published as final on 10 October 2006. This Action Memorandum presents the selected remedial action.

2.0 SITE CONDITIONS AND BACKGROUND

2.1 SITE DESCRIPTION

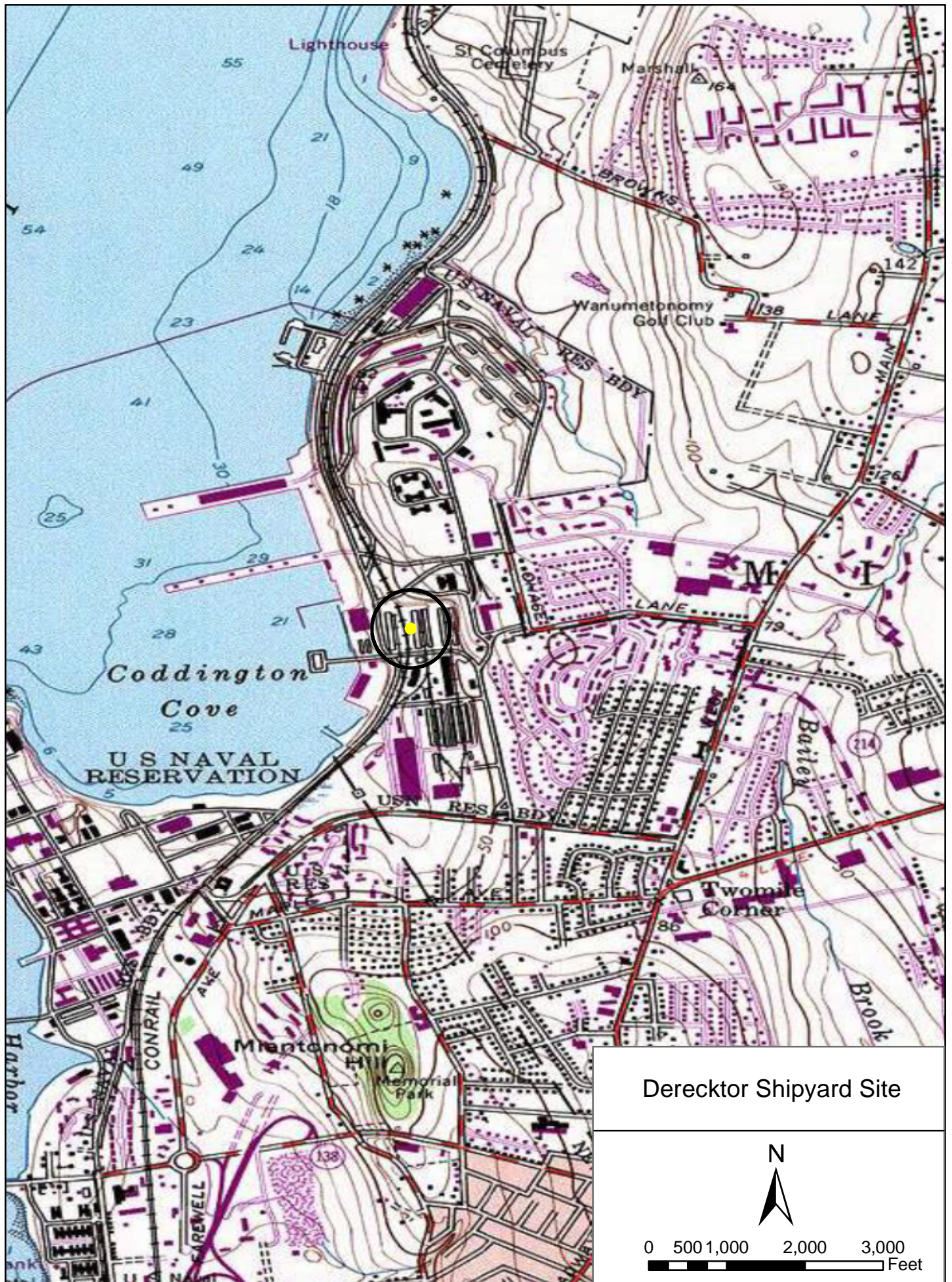
NAVSTA Newport is located approximately 60 miles southwest of Boston, Massachusetts and 25 miles south of Providence, Rhode Island. It occupies approximately 1,063 acres, with portions of the facility located in the city of Newport and towns of Middletown and Portsmouth, Rhode Island. The facility layout is long and narrow, following the western shoreline of Aquidneck Island for nearly 6 miles facing the east passage of Coddington Cove. The Rhode Island Geographic Information Systems (RIGIS) Topographic Map, which was provided herein as Figure 1, shows that the site is adjacent to railroad tracks situated east of Coddington Cove. The site is located approximately 15-20-ft north/northwest of the northwest corner of Building 5.

2.2 SITE CHARACTERISTICS

Site visits indicate that the site is in the industrial area of the base. The site is predominantly classified as “Other Transportation” which consists of terminals, docks, etc. The site is located in an area with variable soils and no wetlands are located in the general vicinity of the site. The site is not located inside a Community or Non-Community Well Head Protection Area and the groundwater at the site is considered GB > 25 acres. During the December 2004 investigation and removal, TtEC did not encounter groundwater.

2.3 PREVIOUS ACTIONS

In 2004, Military Construction (MILCON) contractors encountered sandblast grit in the subsurface soil within the footprint of a watchtower they were constructing at the site during a project entitled *The New North Gate and Security Improvements*. The MILCON contractors notified the Navy of their discovery and the Navy then tasked TtEC with delineating and removing sandblast grit only within the footprint of the watchtower. The Navy’s intention was for TtEC to delineate and remove the sandblast grit just within the footprint of the watchtower to allow the MILCON contractor to continue with construction of the watchtower. After completion of the watchtower installation by the MILCON contractor, the Navy intended to task TtEC with returning to the site to complete the delineation and removal of the remaining sandblast grit outside the footprint of the watchtower.



In December 2004, TtEC removed the subsurface sandblast grit-impacted soil from the footprint of the watchtower. At this time, only the west side of the excavation area was paved. TtEC removed the sandblast grit from the excavation base and north, south, and western sidewalls of the excavation – the eastern sidewall still contained visual sandblast grit. After removal, confirmatory samples were collected and confirmed that sandblast-grit and associated chemical constituents were removed from the base and the three sidewalls (north, south, and west). Remedial action criteria were the applicable Rhode Island Department of Environmental Management (RIDEM) Soil Direct Exposure Criteria. Poly sheeting was left to demarcate the excavation's east sidewall, which still contained visual sandblast grit.

In early 2005, the MILCON Contractor returned to the site and erected the tower and covered a portion of the site with asphalt. However, when erecting the watchtower, the MILCON contractor inadvertently disturbed the east sidewall. When the Navy became aware that the MILCON contractor disturbed the east sidewall, they tasked the MILCON contractor with ensuring the remaining sandblast grit was not inadvertently placed inside the footprint of the tower (the location where TtEC conducted investigation and removal operations in December 2004). The MILCON contractor excavated site soil that they placed within the tower footprint, properly disposed of the excavated material, and collected confirmatory samples to ensure that the footprint of the tower was free from sandblast grit. The Navy then directed TtEC to address the sandblast grit-impacted soil that may have remained at the east sidewall.

2.4 NPL STATUS

The entire NAVSTA Newport facility was listed on the United States Environmental Protection Agency (USEPA) National Priorities List (NPL) of abandoned or uncontrolled hazardous waste sites in November 1989. A Federal Facilities Agreement (FFA) for NAVSTA Newport was signed by the Navy, the State of Rhode Island, and the USEPA on March 23, 1992. The FFA outlines response action requirements under the Department of Defense Installation Restoration Program (IRP) at NAVSTA Newport. The FFA was developed, in part, to ensure that environmental impacts associated with past and present activities at NAVSTA Newport are thoroughly investigated and remediated, as necessary.

3.0 THREATS TO PUBLIC HEALTH OR WELFARE AND THE ENVIRONMENT

If no action is taken, there is potential for human exposure to sandblast-grit/lead contaminated soil because the material may still exist at depth. Although disturbance of this area is unlikely due to its location, if construction workers and/or public works employees expose the subsurface soil for any reason, they may be exposed to sandblast grit and associated chemical constituents. The short-term risks to site workers would be primarily from dermal contact with contaminated soil and from inhalation of fugitive dust during intrusive activities such as digging, excavation, or transportation and disposal activities. The potential for off-site migration of sandblast grit/lead contaminated soil may exist if erosion controls and stormwater controls are not properly implemented during construction or public works activities at this location.

Because the material may still be present in the subsurface, it is possible that the material could migrate off-site into undisturbed soil due to rainfall infiltration into the subsurface soil. Rainfall percolation may enable lead-contaminated soil particle migration and/or dissolved lead migration into overland flow, stormwater flow, or into the groundwater. However, the average depth to the groundwater is approximately 14 ft on Aquidneck Island and seasonal water level fluctuations are generally less than 5 ft in the valleys and lowland areas. Therefore, the potential for lead migration via migration into the water table is considered to be unlikely. The groundwater is categorized as GB < 25 acres. GB is classified as groundwater that is known or presumed unsuitable for drinking without treatment.

4.0 PROPOSED ACTIONS AND ESTIMATED COSTS

4.1 IDENTIFICATION OF REMOVAL ACTION OBJECTIVES

The removal action objectives for the Derecktor Shipyard sandblast grit-impacted area are to:

- Eliminate the potential for human exposure to improperly disposed sandblast grit containing lead at concentrations that exceed the RIDEM Direct Exposure Criteria of 150 ppm;
- Decrease the potential for off-site migration of sandblast grit containing lead at concentrations that exceed the RIDEM Direct Exposure Criteria of 150 ppm; and,
- Protect human health and the environment.

4.2 IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES

The considered alternatives were identified in the EE/CA for the Derecktor Shipyard sandblast grit-impacted area. The alternatives were evaluated using the following criteria:

- Effectiveness - the ability to meet the removal action objectives within the scope of the alternative. Effectiveness is evaluated for both short-term and long-term protection of public health, the community, the environment, on-site workers, as well as its compliance with Applicable or Relevant and Appropriate Requirements (ARARs).
- Implementability - the technical and administrative feasibility of the alternative and the availability of services and materials required for alternative initiation.
- Cost - compares the alternatives' direct and indirect capital costs as well as the Post Removal Site Control (PRSC) costs.

4.2.1 Alternative 1 – No Further Action

Alternative 1 leaves the accumulated sandblast grit material untouched. Superfund Amendments and Reauthorization Act (SARA) requires that “The No Action Alternative” be evaluated. This alternative provides a basis of alternative comparison and is typically not the preferred alternative unless the risks to human health and the environment are acceptable under SARA. The No Action Alternative includes a review of the area in five years.

4.2.2 Alternative 2 – Sandblast Grit Excavation

Alternative 2 consists of additional sampling east of the retaining wall to determine the extent of sandblast grit, excavation of soil containing visual sandblast grit, confirmatory sampling (one per 100 square feet in the base and one per 20 linear feet in the excavation sidewall), backfilling with clean fill to grade, waste characterization and off-site disposal of contaminated soil, replacement of the retaining wall, and site restoration.

4.3 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

The selection criteria used to evaluate the alternatives included effectiveness in reducing the public safety risks, implementability, and cost criteria. These criteria are discussed in detail in the EE/CA, Section 6.0.

4.3.1 Effectiveness

4.3.1.1 *Alternative 1 – No Further Action*

The “No Action Alternative” would not eliminate the potential for human (construction worker or public works employees) exposure to sandblast grit containing lead at concentrations that exceed the RIDEM Direct Exposure Criteria. This alternative would also not eliminate off-site migration if erosion control activities at the site were not properly implemented during any construction activities that occurred. The short-term risks to site workers would be primarily from dermal contact with contaminated soil and from inhalation of fugitive dust during intrusive activities.

Because the material may still be present in the subsurface, it is possible that the material could migrate off-site into undisturbed soil due to rainfall infiltration into the subsurface soil. Rainfall percolation may enable lead contaminated soil particle migration and/or dissolved lead migration into overland flow, stormwater flow, or into the groundwater. However, the potential for lead migration via migration into the water table is unlikely. Therefore, this alternative would not protect human health and the environment nor would it result in any long-term risk reduction or a reduction of contaminant volume.

The No Action Alternative does not comply with Rhode Island’s Rules and Regulations for Hazardous Waste Management (RIGL Section 42-35-23-19.1) and potentially Rhode Island’s Water Quality Regulations (RIGL Section 42-35-46-12).

4.3.1.2 *Alternative 2 – Sandblast Grit Excavation*

By removing the accumulated soil containing sandblast grit, Alternative 2 eliminates the long-term potential for human exposure to contaminated soil. The permanent removal of contaminated soil further protects the public health and the surrounding community because the potential for contaminant migration off-site under typical and construction worker/public works employees’ activities will also be eliminated. Alternative 2 also eliminates the potential for migration of site contaminants.

Short-term risks to site workers would be primarily from dermal contact with contaminated soil and from inhalation of fugitive dust during excavation, transportation, and disposal activities. A site-specific health and safety plan (SHSP) would be required to minimize contaminant exposure if Alternative 2 were implemented.

Alternative 2 complies with all ARARs specified in the EE/CA and would achieve all of the removal action objectives identified. Confirmatory sampling from excavated areas would ensure that the appropriate contaminated soil has been removed thereby ensuring against any residual long-term effects to the public, community, or the environment. During excavation operations, proper implementation of erosion control measures will prevent against the potential short-term impact of contaminated soil runoff.

4.3.2 Implementability

4.3.2.1 *Alternative 1 – No Further Action*

Technically, this alternative would be easy to implement, as there are no further investigations or response actions taken. Administratively, however, implementation of this alternative would be difficult. The USEPA and RIDEM may not be willing to accept this alternative with the future land use expectations, since this alternative would take no action to remove or reduce the risk to human health or the environment.

4.3.2.2 Alternative 2 – Sandblast Grit Excavation

Removal Activities (i.e., soil excavation, staging and hauling of soil, and backfilling) proposed in Alternative 2 are typical for environmental construction work and use readily available equipment and construction methods. Confirmation samples will be collected to verify that all contamination above the remedial action criteria has been removed. Additionally, the activities proposed under Alternative 2 would require the development and tracking of analytical (e.g., chain of custodies, analytical results) and disposal (e.g., Bills of Lading, Hazardous Waste Manifests) documentation as is usually required for removal activities. This alternative would be considered a final remedy that would not need future monitoring since the contaminated soil and the source of contamination would be removed.

4.3.3 Cost

4.3.3.1 Alternative 1 – No Further Action

The present worth and capital costs of the No Action Alternative are estimated to be approximately \$5,000, which is the estimated cost of the 5-year review (site visit, reporting, and sampling, if appropriate). The 5-year review is a continuous and forever process as long as contaminants are left in place. Therefore, this cost plus escalation would be expected to be incurred every 5 years.

4.3.3.2 Alternative 2 – Sandblast Grit Excavation

The estimated cost for Alternative 2 is \$163,466 based on vendor solicitation and other past experience. This estimate includes the cost for professional and craft labor, equipment, materials and supplies, other direct costs, subcontractor costs (i.e., laboratory and transportation and disposal), and fees.

5.0 PUBLIC REVIEW

The Draft EE/CA was made available for public review on 19 July 2006. In accordance with the USEPA's guidance document #540-R-93-057 entitled Guidance on Conducting Non-Time Critical Removal Actions under CERCLA (August 1993), the Draft EE/CA was made available to the Restoration Advisory Board for a public review period of 30 days. No comments were received.

6.0 EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the actions outlined in this Action Memorandum are delayed or not taken, the potential exists for continued endangerment to public health and the environment as discussed in Section 3. Changes will be documented in the Administrative Record.

7.0 OUTSTANDING POLICY ISSUES

There are no outstanding policy issues for this removal action.

8.0 ENFORCEMENT

All activities performed at the Derecktor Shipyard sandblast grit-impacted area are to be consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by SARA, the National Contingency Plan (NCP), and CERCLA guidance entitled "Guidance on Conducting Non-Time Critical Removal Actions Under CERCLA." In accordance with CERCLA

Section 121, actual permits are not required for on-site work. Rather, substantive compliance with the selected Applicable and Relevant and Appropriate Requirements/To Be Considered (ARARs/TBCs) are to be achieved.

All phases were reviewed by NAVFAC, Naval Station Newport, the Naval Environmental Health Center (NEHC), the USEPA, and RIDEM.

9.0 RECOMMENDATION

The evaluation of response action alternatives for the Derecktor Shipyard sandblast grit-impacted area found that Alternative 2 – Sandblast Grit Excavation is the best alternative. The removal of the soil containing sandblast grit was more protective of public safety in the long and short term than Alternative 1 – No Further Action. Alternative 2 complies with ARARs and will be a permanent solution that reduces the hazards to human health and the environment. Alternative 2 is a common activity performed for environmental construction and will be relatively easy to implement. It will require development and tracking of analytical and transportation and disposal documentation, typical requirements for removal activities.

10.0 REFERENCES

- Northeast Engineers and Consultants, Inc. (NEC). 2005. *Letter Report from Northeast Engineers and Consultants, Inc. to Whiting Turner Contracting Company of Middletown, Rhode Island*. September 21, 2005.
- OHM Corporation. 1996. *Final Report for Derecktor Shipyard*. February 2, 1996.
- USEPA. 1993. *Guideline on Conducting Non-time Critical Removal Actions Under CERCLA*, 540-R-93-057, August 1993. U.S. Department of Congress, National Technical Information Service, Springfield, VA 22161.
- TtEC. 2005. *Final Closeout Report for Sandblast Grit Removal at Derecktor Shipyard, Naval Station Newport, Portsmouth Rhode Island*. June 2005.
- TtEC. 2006. *Draft Engineering Evaluation and Cost Analysis for Derecktor Shipyard Sandblast Grit-Impacted Area*, Newport Naval Station Portsmouth. Middletown, Rhode Island. July 11, 2006.